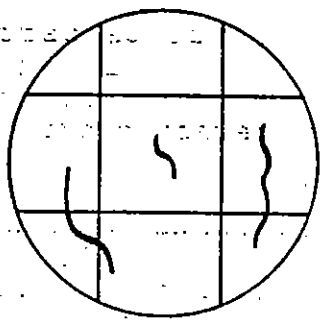
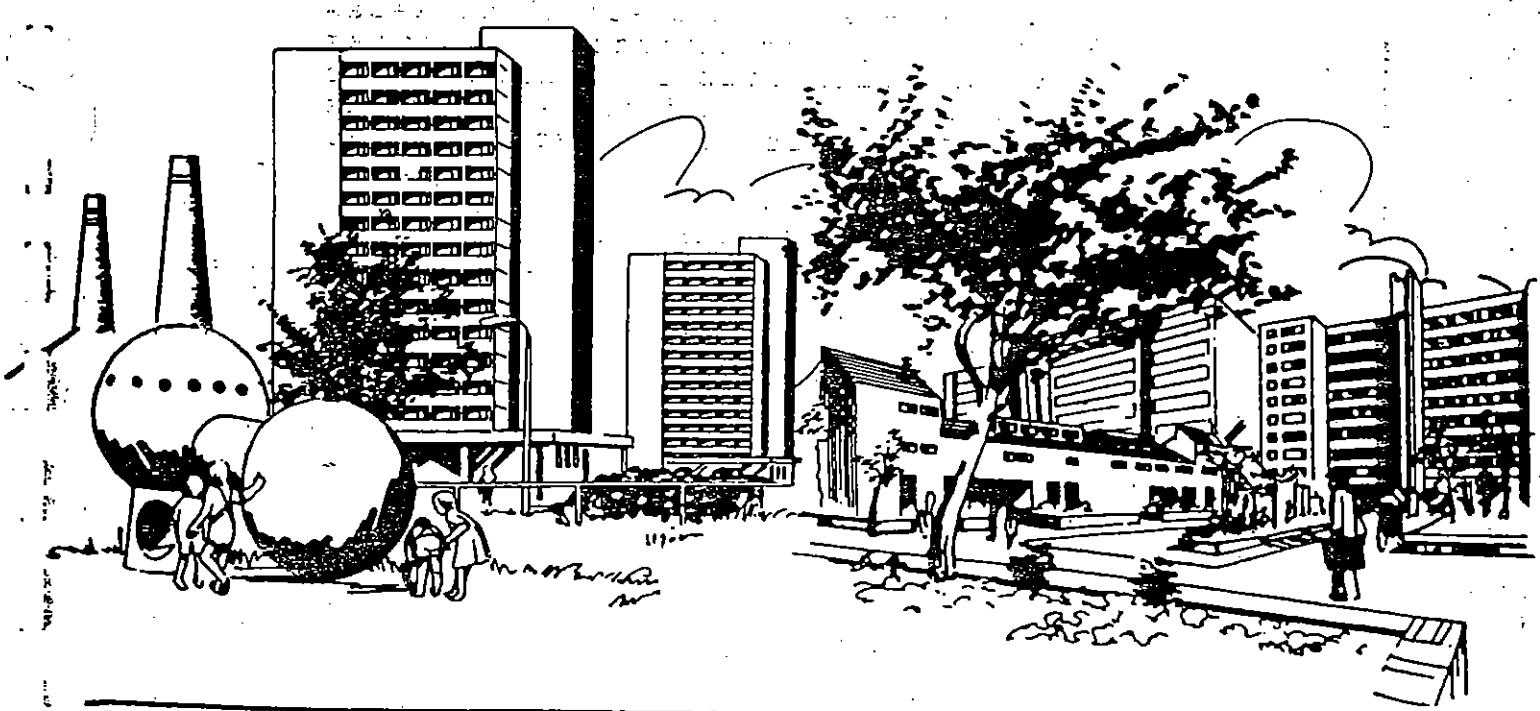
THE CONTROL AND MANAGEMENT OF FRIABLE ASBESTOS MATERIALS



Guidelines for identifying and controlling the hazards associated with friable asbestos-containing building materials



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1.0 INTRODUCTION

Asbestos is the term used to identify a group of naturally occurring, fibrous, mineral silicates. Asbestos types are differentiated by fibre size and structure, **chrysotile** (white asbestos) being the most commonly used. **Amosite** (brown asbestos) and **crocidolite** (blue asbestos) are other forms of asbestos used in lesser quantities.

Asbestos has been used as a major component in some sprayed-on fireproofing, insulating and acoustical materials. The integrity of the material containing asbestos may be affected by many factors, leading to the release of airborne fibres. Workers performing maintenance duties may contact these surfaces, causing asbestos fibre release. Other physical abuse and general deterioration due to aging can, similarly, lead to airborne asbestos fibres. In addition, air movement from ventilation systems or overhead heaters may dislodge fibres from sprayed-on material.

The adverse health effects associated with the inhalation of asbestos fibres have been well documented. They include asbestosis (a debilitating lung disease), lung cancer and mesothelioma (cancer of the lining of the chest or abdominal cavity). Typically, the symptoms of these diseases develop after an extended latency period of from 15 to 35 years following initial exposure. The risk of developing lung cancer associated with asbestos exposure is greatly increased by smoking. Occupational exposure limits for airborne asbestos fibres have been mainly directed to the prevention of asbestosis among workers. It is not clear what degree of protection, if any, they provide against lung cancer or mesothelioma. In fact, despite extensive research, there is currently no scientific consensus as to whether there is any "safe" level of exposure.

These guidelines identify standards of good practise based on current reliable information in this field. It is important to emphasize that these guidelines do not address the question of individual exposure to airborne asbestos fibres but rather, outline procedures for evaluating the probability of asbestos fibre release in a building or facility and identifying the corresponding control measure to minimize fibre release.

The degree of health hazard in areas where sprayed or trowelled asbestos-containing material is found depends upon its accessibility, condition, friability, contact with air currents and the amount and type of asbestos in the material. Those six factors must be assessed to evaluate the potential for asbestos fibre release from the surface, and hence the health hazard potential.

Based on the potential hazard, a decision must be made as to the necessity for and extent of control measures. Alternative long-term control measures are: removal, enclosure or encapsulation of the asbestos containing material.

Some control measures may be appropriate in certain circumstances but inappropriate for others. Primary consideration must be given to the health of the workers instituting the controls and to the health of those who will occupy the area upon completion of the job. It is therefore necessary to follow stringent work procedures and to adopt proper techniques, as outlined in these guidelines.

The potential for asbestos fibre release can only be determined by identifying the nature and extent of asbestos present and by evaluating the factors that are likely to contribute to fibre release.

Monitoring of airborne asbestos fibres (i.e., air sampling and fibre counting) is not a reliable technique for determining the potential for asbestos fibre release. However, during implementation of control procedures, the use of air sampling may be appropriate. Where experience is lacking with regard to expected fibre levels monitoring can provide guidance for proper respirator selection. Monitoring can also be used as a means to determine if cleanup and decontamination procedures were properly executed. Air monitoring may also be appropriate to determine if contamination of areas adjacent to the work area has occurred.

NOTE: Friable asbestos material was used for many years in pipe and boiler, lagging and covering. These materials do not create an exposure hazard unless the friable insulation material is exposed and damaged. Pipe and boiler lagging and covering should be routinely inspected. If the insulation material is exposed, re-jacketing the damaged area will prevent asbestos fibre release. The sampling and hazard evaluation program identified in these guidelines does not extend to pipe or boiler lagging.

2.0 SAMPLING OF SUSPECTED ASBESTOS-CONTAINING MATERIAL

Bulk sampling and analysis of suspected asbestos-containing material are extremely important, since the decision to take corrective action will depend, in large part, on the results of the laboratory analysis. Neither visual inspection nor checking building records is adequate to establish the presence or absence of asbesto in sprayed or trowelled material. Suspect material could contain glass fibres, cellulose or non-asbestos mineral fibres.

The sampling procedures outlined below should be followed closely. Improper sampling will result in misleading analyses that could lead to either unnecessar corrective action or to lack of necessary action.

A representative sample should be taken from within the suspect material by penetrating the entire depth of the material since it may have been applied in more tha one layer or covered with paint or other protective coating. This kind of sample is called a **bulk sample. Bulk sampling and analysis of the friable material itself is the only method to determine what type and percentage of asbestos is present in the material.**

One sample should be taken for each floor or area of material having the same colour and texture. Material of a different appearance should be sampled separately. A